

IN THE CLAIMS:

Please amend Claims 28, 33, 38, 40, 46-48, 52, and 53 as follows. Note that all claims in the application are being reproduced below for the Examiner's convenience.

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D1 28. (Currently Amended) An optical system for forming an image of an object, said optical system comprising:  
an optical lens element, which is deformed by the weight thereof; and  
at least one optical member for preventing a change in optical performance of said optical system due to deformation of said optical lens element, when said optical lens element is provided in said optical system.

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29. (Original) An optical system according to claim 28, wherein said at least one optical member has at least one aspherical surface.

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D2 33. (Currently Amended) A projection exposure apparatus comprising:  
an illumination optical system for illuminating a pattern formed on a mask; and  
a projection optical system for projecting the pattern of the mask onto a wafer, said projection optical system including (i) an optical lens element being deformed by the weight thereof, and (ii) at least one optical member for preventing a change in optical performance of said optical system due to deformation of said optical lens element, when said optical lens element is provided in said optical system.

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34. (Original) A device manufacturing method including a process for transferring, through projection exposure, a pattern of a mask onto a wafer by use of a projection exposure apparatus as recited in claim 33.

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D3 38. (Currently Amended) An optical system according to claim 28, wherein said optical lens element is a diffractive optical lens element.

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39. (Previously Added) An optical system according to claim 28, wherein said at least one optical member has at least one aspherical surface.

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D4 40. (Currently Amended) An apparatus according to claim 33, wherein said optical lens element is a diffractive optical lens element.

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41. (Previously Added) An apparatus according to claim 33, wherein said at least one optical member has at least one aspherical surface.

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D5 42. (Currently Amended) An optical system, comprising:  
an optical lens element, said optical lens element being deformed by the weight thereof and having a refractive power; and  
at least one optical member for preventing a change in optical performance of said optical system due to deformation of said optical lens element, when said optical lens element is provided in said optical system.

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43. (Previously Added) An optical system according to claim 42, wherein the refractive power is a positive refractive power.

44. (Previously Added) An optical system according to claim 42, wherein the refractive power is a negative refractive power.

45. (Previously Added) An optical system according to claim 42, wherein said at least one optical member has at least one aspherical surface.

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46. (Currently Amended) An optical system according to claim 45, further comprising a second optical lens element juxtaposed to said optical lens element, wherein said at least one aspherical surface is provided on said second optical lens element.

47. (Currently Amended) An optical system according to claim 42, wherein said optical lens element is a diffractive optical lens element.

48. (Currently Amended) An optical system according to claim 42, wherein said optical lens element has a step-like shape.

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49. (Previously Added) A projection exposure apparatus, comprising:  
an illumination optical system for illuminating a pattern formed on a mask; and

a projection optical system for projecting light from the pattern, said projection optical system including an optical system as recited in claim 42.

50. (Previously Added) A device manufacturing method including a process for transferring, through projection exposure, a pattern of a mask onto a wafer by use of a projection exposure apparatus as recited in claim 49.

51. (Currently Amended) An optical system for forming an image of an object, said optical system comprising:

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an optical lens element being able to be deformed by the weight thereof; and  
at least one optical member having an aspherical surface effective to prevent a change in optical performance of said optical system due to deformation of said optical lens element as said optical lens element is provided in said optical system, said at least one optical member being disposed adjacent to said optical lens element.

52. (Currently Amended) An optical system according to claim 51, wherein said optical lens element is a diffractive optical element.

53. (Currently Amended) An optical system according to claim 51, wherein said optical lens element has a step-like shape.

54. (Previously Added) A projection exposure apparatus, comprising:  
an illumination optical system for illuminating a pattern formed on a mask; and  
a projection optical system for projecting light from the pattern, said projection  
optical system including an optical system as recited in claim 51.

55. (Previously Added) A device manufacturing method including a  
process for transferring, through projection exposure, a pattern of a mask onto a wafer by use of a  
projection exposure apparatus as recited in claim 54.